Digital Thermometer Manual

DT1 Version B

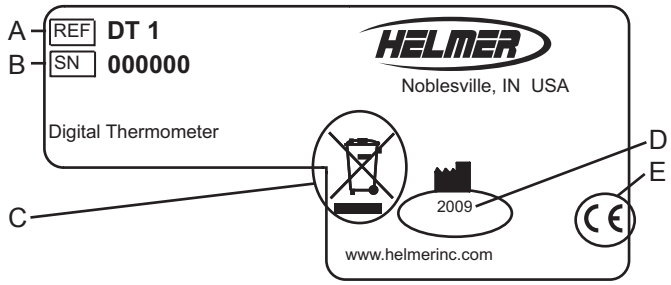
Model DT1

S/N _____

Congratulations on your purchase of a Helmer DT1 solar-powered digital thermometer. The digital thermometer has been designed for use with the Helmer QuickThaw™ Plasma Thawing System.

1 Recording identification information

For easy reference, write the model and serial number on this manual. Both the model and serial numbers are needed to provide efficient service.

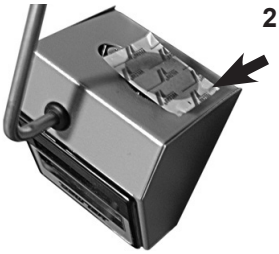


Product Specification label (sample)

Label	Description
A	Model
B	Serial number (S/N)
C	WEEE symbol. For more information, see Section 8, "Technical specifications."
D	Date of manufacturing
E	CE symbol. For more information, see Section 8, "Technical specifications."

2 Installing the digital thermometer

1 Using a cleaner suitable for stainless steel, clean the top section of your Helmer thawer. Do not use a cleaner that leaves a slippery film on the surface, which will prevent the hook and loop fastener from adhering.



2 Peel the liner off the hook and loop fastener to expose the adhesive.

3 Carefully insert the probe of the digital thermometer through the holes in the brackets in the thawer. Align the digital thermometer as desired, then press it onto the surface of the thawer to adhere it in place.

3 Using the digital thermometer

The stainless steel probe on the DT1 immerses in the water in the chamber, and the display shows the temperature in increments of 0.1 °C. For the display to work, there must be enough light in the work area (at least 35 Lux).

When the digital thermometer is first exposed to light, the message "---oE" is displayed for about 12 to 15 seconds while the thermometer initializes.

4 Calibrating the digital thermometer

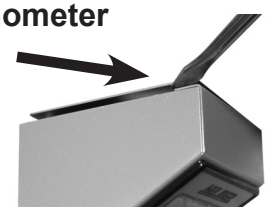
Refer to the policy for your organization to determine how much variance is acceptable. If the variance is within acceptable limits for your organization, you may not need to change the setting.

You must have a thermometer to complete this procedure. The thermometer must be independent of the digital thermometer, and be calibrated and traceable according to the policy of the National Institute of Standards and Technology (NIST), or to the equivalent national or international measuring equipment standards as identified in regulations for your organization.

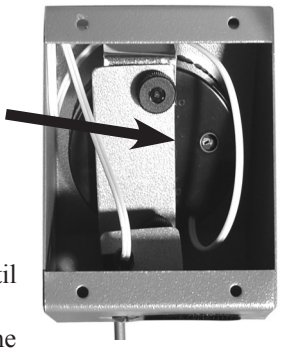
To measure the temperature

1 Place the independent thermometer in the water chamber so the tips of both thermometers are at the same depth.
2 Allow the temperature readings to stabilize.
3 Compare the reading of the digital thermometer to that of the independent thermometer. If the difference is greater than the acceptable tolerance for your organization, calibrate the digital thermometer.

To calibrate the digital thermometer



1 Remove the back cover of the digital thermometer by prying the back plate off the housing.
2 Using a flat-head screwdriver, turn the calibration adjustment dial slightly to change the readout value.
- ► To increase the value, turn the dial clockwise.
- ► To decrease the value, turn the dial counter-clockwise.



3 Allow the temperature readings to stabilize for 15 to 30 seconds. This will also allow the calibration changes to take effect.
4 Repeat steps 1 to 3 as necessary until the readout is acceptable.
5 Install the back cover by aligning the mounting buttons with the holes on the housing, then pressing the buttons into the holes.

5 Removing the digital thermometer

To remove the digital thermometer, carefully lift up on the housing to separate the hook and loop fastener, and pull upwards.

6 Cleaning the digital thermometer

WARNING:
- ► Follow all chemical handling and disposal requirements and procedures specified by your organization.
- ► Use specific cleansers and cleaning supplies specified by your organization.

Clean and disinfect the digital thermometer regularly as necessary.

Clean the housing with a soft cloth and a non-abrasive liquid cleaner. Clean the stainless steel probe with a general-purpose laboratory cleaner suitable for stainless steel. Disinfect using a mild disinfectant solution.

7 Addressing operational issues

Problem	Possible Cause	Action
The temperature is not displaying.	There is not enough light in the work area to power the digital thermometer.	Confirm that the light level in the room is at least 35 lux. Increase the light if necessary.
The temperature does not seem accurate.	The digital thermometer is not calibrated.	Verify the temperature with an independent thermometer and calibrate the digital thermometer if necessary.

8 Technical specifications

Power

Solar (minimum illuminance of 35 lux)

Weight

2.2 lb (1 kg)

Size

Width: 3.25 in (8 cm)

Height: 12.25 in (31 cm)

Depth: 4 in (10 cm)

Operating conditions

Ambient temperature range: 5 °C to 35 °C

Temperature detection range: -50 °C to 70 °C

Accuracy: ± 1 °C

Energy conservation and regulatory compliance

This device complies with the requirements of the ROHS Directive 2002/95/CE.

The WEEE (waste electrical and electronic equipment) symbol indicates compliance with European Union Directive WEEE 2002/96/EC and applicable provisions. The directive sets requirements for the labeling and disposal of certain products in affected countries.

When disposing of this product in countries affected by this directive, ensure the following:
- ► Do not dispose of this product as unsorted municipal waste.
- ► Collect this product separately.
- ► Use the collection and return systems available to you.

For more information on the return, recovery, or recycling of this product, contact your local distributor.

Warranty

USA and Canada: The Helmer DT1 is warranted for one (1) year for materials and labor at our factory. Contact Helmer for details.

Outside of USA and Canada: Contact your local distributor for warranty information.

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